

FOOD SHOPPING PRACTICES OF SELECTED LOW-INCOME
FAMILIES, RILEY COUNTY, KANSAS, 1965

by

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INTRODUCTION

Justification for Study

Information about food shopping and food choices of low-income, female-headed families can help give direction of emphasis in consumer education programs for such families. Manless households have increased from 12 per cent of the nation's households in 1900 to 18 per cent in 1960. They now comprise almost one-fifth of all families in the United States, but are incomplete families since the husband and father are missing. Of the families with incomes, below \$3000 in 1961, one-fourth were broken homes, usually headed by a woman (USDHEW, 1960).

Miller (1964) proposed that with the resurgence of interest in the poor, there be a rethinking of new categories and new concepts. He pointed out that attention must be given to variations among the poor, such as the female-based household.

The continued growth of the gross national product and the rise in per capita income still leaves disadvantaged the mother raising her children alone. Median incomes of manless families in 1963 was only \$3200 compared to the husband and wife family with a median income of \$6593. There is a great difference in income between these two types of

families, but little in the number of children. Where both husband and wife share responsibility of child care, there are 2.7 children per family; the female-headed family had 2.3 children in the same period (USDC, 1960).

All states have financial aid programs for mothers with dependent children, but half of the families receiving this aid are still in need. Their average unmet need was \$40 per month per family in 1960 (USDHEW, 1963). Food purchases constitute a large proportion of the total expenditure for families of lower incomes. The decision is often not what food to buy, but whether to buy food or some other necessity. Dollar increases in cost of food and taxes on food are felt by these families.

Brode (1963) found only one of eighteen families receiving aid to dependent children had enough income to meet 100 per cent of the standard defined by Department of Welfare in Tennessee. Food expenditures were less than one-half the amount of the standard.

"Primary poverty" and "secondary poverty" as defined by Rowntree (1910) are both present. Primary poverty exists when family income is not sufficient to provide the minimum human requirements. Families in secondary poverty have incomes to purchase requirements, but do not use their resources to attain a minimum standard, either through choice or ignorance. Consumer education programs attempt to help families buy economically, but to be fully effective they must

change, modify or strengthen the family's concept of needs, desires, tastes, and attitudes (Kyrk, 1953).

Kyrk (1953) asked, "What power have consumers through their buying practices to reduce their cost of living? They can reduce their expenditures by going without something, but can they secure the same satisfactions for less money?" Planning, economical purchasing and careful use can reduce money cost only to a degree. Kyrk stated that it would be interesting, but difficult to estimate how much the money cost of budgets developed by public welfare and other agencies could be reduced through changes in knowledge and skill of the homemaker, increase in consumer production, reduction of waste, improved planning of expenditures and better buying techniques.

Essential requirements, desires, and certain "felt" needs of the family must be considered in the total educative process. Traditionally, efforts to bring about changes in consumer behavior by improved choice-making and decision-making have been based on values held by educators and others, but not on the potential development of values of the segment of the population afflicted.

Morse (1965) stated the consumer's decision-making process involves a multitude of intricate interlocking steps which relate the consumed (end) product to the consumer's basic needs, aspirations or self-image. Three major levels are involved: standard of living (goals), money budgeting

and management, and skill in buymanship, all of which do affect choices for consumer goods. The present study is concerned with the buymanship aspect of consumer education. The five buymanship steps listed by Morse are: (1) rank needs in order of importance to consumer; (2) determine the relative efficiency of alternative product attributes for meeting those needs; (3) locate those desired attributes in the market products; (4) locate and price those products in the market; (5) balance the prices against the relative efficiencies of alternative products; and (6) balance their cost with their satisfying power relative to other satisfactions desired.

To measure satisfying power, Morse (1958) said the best buy is a product that (though, not always the highest quality,) satisfies the needs or cluster of needs of the individual consumer at a cost (not always cheapest) equal to or less than the money allotted through the budget to meet the need or cluster of needs.

Homemakers in their purchase of food items in the market may have utilized all or some of the six steps in buymanship, but the comparative shopping focus of this study relates to only two of the steps: step four, locate and price these products in the market; and step five, balance the prices against the relative efficiencies of alternative products.

Objectives

1. To compare cost of food purchased by low-income female-headed families with cost estimates by senior home economics students.
2. To obtain student's suggested revisions of purchases for improved nutrition at equal or less cost.
3. To note implications for consumer education programs.

REVIEW OF LITERATURE

Previous studies to learn about food shopping practices and food consumption of families have used various methods for securing data, such as, interviewing, record keeping, home visitation, recall, observation, and questionnaires. Instruments available as guides to judge adequacy of nutrition and money expenditure are also considered.

Levine and Miller (1957) attempted to measure the magnitude and direction of variations in responses by (a) varying the period of recall of purchase and (b) changing the wording of the questions. They used the May, 1955 U. S. Bureau of Census national area probability sample survey involving 24,000 households in 230 sample areas, covering 450 counties and cities scattered in all regions. Data on purchases and expenditures for the seven food items was secured as a supplement to regular census survey after the trained census interviewer had taken the census figures. Information about amounts and costs was obtained either by personal interview or telephone from the family member who did most of the food shopping. Householders knew more about the amounts of

food than its cost. There seemed to be no objective basis for appraising validity of the estimates. Differences were sufficiently large between the two methods of securing responses to merit further study. The evidence suggested that an investigation into differences resulting from the use of a diary and a recall interview procedure in a one time survey would be useful.

Interviewing skill and perseverance were used to get cooperation in a survey of consumer spending during 1956 by Life Magazine (Ostheimer, 1958). The over-all purpose was to study kinds of expenditures kept by households under the direction of highly trained interviewers, who themselves worked under close supervision and quality checks. The sample was drawn on the multistage area probability basis using 10,243 households.

White (1963) used detailed expenditures records for a two-month period ending January, 1952 kept by sample families, who were recipients of Aid to Dependent Children grants in Knoxville, Tennessee. The object was to determine if families receiving aid secured all the items included in the adequate minimum subsistence level of living as defined by the Department of Public Welfare, and, if not, what items were frequently eliminated, obtained from other sources, or in smaller amounts. Sample families composed of mother and two children were divided into two groups, those having children under twelve, and those having at least one child between

twelve and eighteen years of age. The spending patterns of the two groups were compared. The study emphasized that the failure of families to meet minimum subsistence level of living was the result of insufficient income rather than poor management. The need for education on insurance and food purchases was shown. None of the families spent as much for food as allowed by the standard.

Brode (1963) combined home visitation with record keeping to compare family expenditures with welfare monetary standards in a 1960 study in Tennessee. She evaluated the families' housing by observation in relation to the Tennessee State Department of Welfare's descriptive standards for shelter, and obtained information about money management practices during the four home visits made to each of the eighteen families. Only one of the eighteen families had enough income to meet all of the needs as defined by this welfare standards of Tennessee. Food expenditures were less than one-half the amount of the standard, and clothing was 40 per cent of standard. Families spent proportionately more for housing and non-essential items than the standards, and proportionately less for all other consumption groups. Of special concern was the small proportion of income spent for food. Brode stated that because of its effect on health and efficiency every effort should be made to see that families have an adequate diet. Families need help in getting more from their limited incomes and to learn better ways of managing.

Records of one week's food purchases of sixty-five low-income families and seventy student veteran families were used in a group study made in New York by Huenemann and French (1961). The purpose of the study was to evaluate the adequacy of nutrients purchased. Thirty per cent of the families bought food that met all recommended allowances for nutrition; 22 per cent were in the range of 80 to 100 per cent of this goal. Thirty-eight per cent were short by more than 20 per cent in one of three nutrients. Nutrients most frequently found to be less than recommended were ascorbic acid, calcium, thiamine, and riboflavin. Two per cent of the families missed by more than 20 per cent, seven or more nutrients. The need for further study of methods used to make nutrition teaching more effective was emphasized.

In a study (USDA, 1962) of the pilot Food Stamp program in Detroit, Michigan and Fayette County, Pennsylvania, specially instructed interviewers used recall method to obtain detailed information concerning consumption of foods during the past seven days, food shopping practices, income and family characteristics. The survey was based upon area probability sampling of residences in predominantly low-income areas, 1268 in Detroit and 837 in Fayette County. The residences were visited in April-May, 1961 and revisited in September-October of 1961.

In both areas, food consumption of the needy participants increased and an expanded market for farm output was

provided. Better selection of foods, including such foods as citrus fruit, dark leafy greens, deep yellow vegetables, and pork, increased nutritional quality of the family diets.

Personal interviews were used by Shaffer (1960) in a survey dealing primarily with actual and anticipated food purchases of 1200 homemakers of Lansing, Michigan. Less than half of the food decisions were made in the store. About 45 per cent of the 1200 homemakers and 72 per cent of those reading the advertisements said they believed the advertisements influenced what groceries they purchased.

Havas and Smith (1960) observed 3000 shoppers in thirteen Boston, Massachusetts supermarkets in a survey of customer shopping habits. People with lists spend more time and more money per minute, but only one-third of the customers used a shopping list. Customers tended to buy less in small stores. No conclusions were drawn regarding satisfactions gained by the customer from his purchases.

Trained interviewers were used to collect information during June and July, 1958 from 1005 families living in both urban and rural situations in Jefferson County, Ohio and adjoining counties in West Virginia by Porter et. al. (1961). The purpose of the West Virginia University Experiment Station study on food buying was to evaluate the impact and effectiveness of the Marketing Information for Consumers Program in the Wheeling-Steubenville area, to establish benchmark information for later use in other evaluations, and to provide

basic information for consumer program planning. Homemakers disadvantaged by smaller amounts of schooling and income, tended to use the radio more than the newspaper. Television programs seemed to reach more of the grammar school homemakers than did newspapers or radio.

Green (1962) used girls enrolled in home economics classes in an Illinois high school to secure information about food purchasing practices of their families. A questionnaire was completed at home. The purpose was to determine what practices taught in food units should be retained, added or deleted. She concluded that teaching nutrition should be more meaningful to students whose diets are not adequate. Food units needed more emphasis on money management, cost comparisons and nutritive values of food.

By a personal interview in Alabama, 1950 in 1654 urban households with the person who was most familiar with food purchased and used, Hammett and Blackstone (1964) obtained information. The study covered food purchased and used in the seven days previous to the interview. Also investigated was what particular influence had caused them to select each item of food. Of the fourteen possible information sources that influenced their choices, recipes on food containers ranked first and requests of family members second. The influence of children in food choices was greater in low-income families with larger households. Homemakers tended to buy food they knew to be economically satisfactory. The use

of educational and promotional information on foods increased with each advance in formal education of homemakers, but the combined factors of income and size of households influenced homemakers' decisions more than did education alone. The same educational materials are appropriate for use in the store and by public media to reach groups of different characteristics.

Reid (1947) stated education in choice making is needed in order to offset the effect of advertising. Consumer education will be most effective when consumers feel the need of information; can see immediate benefits from its use; where the benefit is for the individual rather than group; and where the information is simple and easily understood. This type of information can have a countervailing effect on advertising. To provide this type of effective consumer education in use of resources, research is needed to find out more about the needs, desires and aspirations of those to be taught.

In the United States Department of Agriculture Family Economics Review (1964) published quarterly, the cost of providing food which is adequate nutritionally and generally accepted is presented in four plans: liberal, moderate, low cost and economy. Region of the country and various size-sex-age combinations of families are considered. These are the food plans often used by social welfare and public health agencies for calculating allotments and planning family food budgets.

The plan is based on the National Research Council's Recommended Dietary Allowances as the principal criterion of nutritional adequacy; the nutritive value published in the Agriculture Handbook, Composition of Foods; and the USDA 1955 Survey of Food Consumption Patterns, along with recent information on food cost relationships. Prices are adjusted to current levels by use of the Retail Food Prices by Cities released monthly by the Bureau of Labor Statistics.

The low-cost plan in contrast to the liberal and moderate has larger quantities of foods of high nutritional returns in relation to cost, such as, potatoes, dry beans, peas, flour, and cereal. It provides for smaller quantities of meat, poultry, fish, and some fruits and vegetables.

There is also the economy-cost family food plan designed for temporary or emergency use when funds are low. The food for the economy plan can be purchased from 20 to 25 per cent less than food for the low-cost plan. Plans for adequate diets at still lower costs could be developed, but would deviate even further from average food habits and less likely to be acceptable to some groups of people. For the purpose of this study, the basic low cost food plan in Family Economics Review (October, 1964) is used to evaluate food purchase in relation to need.

Various food guides have been developed to assist in selection and evaluation of the nutritional adequacy of diets. The Daily Food Guide prepared by the Institute of Home Economics and Agricultural Research Service (USDA, 1958) divided

food needs into four groups of need--milk, meat, vegetable-fruit, and bread-cereal. The number of servings needed each day is listed under each group, termed the Basic Four Food Groups. Specific foods in each group are not listed. This food guide was adapted from the earlier Basic Seven Food Group.

Another guide is the "Score Sheet for a Three Day Food Record" developed by Tinsley and recorded by Arny (1953). It was devised for use in evaluating diets of elementary and high school students. On the score sheet a diet is classified as poor, if the total score is eighteen or below or if it does not include any milk; rated as fair, if the total score is nineteen, twenty, or twenty-one and the score on milk is one; and as good, if the total score is twenty-two or above and the score on milk is two or three. This score sheet permits certain substitutions among food groups, since the recommended allowances of good nutrients can be obtained from a variety of sources. It has the advantage over some other devices because it is easily understood and the food groups are similar to those used by plans published in Family Economics Review.

PROCEDURE

Of the studies that were reviewed, none used the technique of recording with the cooperation of the homemaker the purchases of food as made or as brought into the home from the

store. This research combines this technique with home visitation, interviewing, and perseverance to find what food choices are made by some female-headed families with low income.

Names of families for this study were obtained from community workers, neighbors, newspapers, and from records on file in the Social Welfare Office and the Clerks Office in the Riley County Courthouse in Manhattan, Kansas. Fifty-two families were found to meet the following criteria:

- (a) female-headed household living in Manhattan, Kansas;
- (b) no males over fifteen years of age in the home; and
- (c) one or more children in the home.

The first contact was made by a visit to the home to explain the study, ask family cooperation, and arrange for a shopping trip. No preliminary questionnaire or telephone call was used. This researcher considered, from previous experience in home visitation in South Dakota with similar families, the personal contact was preferable.

An effort to identify the researcher was made. On each visit, she wore a black and white pin two by three inches in size, on which was printed: Helen Barney, Kansas State University, Manhattan, Kansas. The name of the survey, telephone number and address of Helen Barney was left with each person contacted. This was written on colored paper to be an identifiable reminder to the homemaker. The time for the planned shopping trip was noted on this memorandum. The form of introductory statement made by the researcher as she made

the initial contact with the family, follows,

Good afternoon, are you Mrs. _____? I'm Helen Barney. Your help is needed in a survey for Kansas State University.

Could we visit about it for a few minutes right now?
(If children were present, greet them.)

The survey is to find out what are the actual food choices of families headed by women. There has been an increase in the number of families like yours through the country. The food purchases as a special kind of a family need to be considered. (Graph sometimes used here to show the increase in number of manless families, and their importance in market place.)

We do need an account of what you spend, the amounts and brand names of purchases in the store. There are several ways we can record it. I could go with you to the store the next time you shop, or meet you at the store to give you a ride home. We could then record your purchases as you unpack them. Would you be willing to cooperate with this study? When do you plan to do your next major shopping? (Plans were made to suit the individual homemaker.)

The importance of each person's contribution was maintained by not mentioning that the family's name would not be used in the study.

Purchases of food by amount, brand, kind, and cost were recorded either as the homemaker shopped or as she unpacked her shopping bags and boxes (Appendix A). The interview schedule (Appendix B) to obtain basic family information was completed in the home after the purchases were recorded. From two to ten contact attempts were required to obtain information from each family. To reduce the emotional impact on the interviewer and her involvement in the life of each family, the researcher recorded everything learned or observed about the family after each visit.

Two copies of the record of food purchased were made for student use. The cooperating senior home economics students were instructed in two phases: Phase A for comparative shopping; Phase B for evaluation of foods purchased by the family. These instructions are given in Appendix C. The students were enrolled in a home management course and undertook this as an independent study on consumer buying. Students met in groups twice a week for four weeks. Eight students met in February, nine in March, and eight in April, 1965.

The plan was to assign two different students the same list of food purchased by a homemaker for comparative shopping and evaluation. Each student shopped at least two lists, but since there were six fewer students than homemakers, some students did more than two lists.

In Phase A students were asked to shop at only two stores of their own choosing for good buys in Manhattan, Kansas within six days of receiving the list of food purchases of the homemaker. They were free to substitute brands of comparable quality, but no substitution was allowed in the form of food, as canned for fresh. They were simply to select (not buy) the same items of like quality, and to record the name of item, brand, price, and amount.

In Phase B, students were asked to express their opinion as to the gaps in nutrition evident from the food originally purchased. This was to be based on their knowledge of nutrition and their optional use of the nutrition score

sheet (Appendix D). The Tinsley Score Card was selected to use because students could easily relate it as a guide for noting gaps in nutrition for a family's diet. Students also listed three different ways that seemed to them most economical to meet nutrient needs of the family: (1) by cutting out items with no substitutions, (2) by making substitutions, and (3) by adding new items or making other suggestions.

The students were asked to figure food costs for each family according to size-sex-age composition on basis of the low-cost plan for the North Central Region, June, 1964. This amount was compared with the family's actual food expenditure and the unmet needs of the family calculated in terms of dollars needed to equal the low-cost plan standard.

Summarization of data was made in ten tables: age, education, income, occupation, meal patterns, shopping practices, source of shopping information, cost comparison of students and homemakers, needed nutrients, and estimated need comparison to low-cost food plan.

To show the statistical difference in cost of food purchased by homemaker and that selected by student, analysis of variance was used. LSD (least significance difference) was used to show where the difference was.

The terms of homemakers and families are used to designate the thirty-one female-headed, low income households interviewed for this study.

RESULTS

Homemakers Interviewed

All homemakers asked to cooperate with the survey agreed to do so, but from the fifty-two homemakers originally selected, only thirty-one were used in this study. Twenty-one homemakers were not included because: four had moved out of town; four had males over fifteen years old in the home at time of visit; seven did not purchase food in Manhattan, Kansas; and six could not be contacted again for completion of the study.

Family Composition

Families studied included 144 persons: thirty-five adult women, fifty boys under age fifteen, and fifty-nine girls under age sixteen. The age of nineteen (61%) of family heads was less than thirty; eight (26%) were in the 30-36 age group and four (13%) were in the 41-53 age group. The oldest head was fifty-three years of age, a grandmother caring for her grandchildren. (Table 1).

Education

Educational attainment of the homemakers was from seventh grade to high school graduate, with one person in receipt of a state beautician license this year. Twenty-seven (90%) of the homemakers attended high school with four of these graduating. Four completed the eighth grade and one the seventh grade. One homemaker with five children was enrolled in high school, but was not attending regularly. (Table 1).

TABLE 1.--Age of homemaker and grade level of school completed

Homemaker		Grade levels						
Age	No.	7	8	9	10	11	11 1/2	12
19-20	4	-	2	-	-	1	-	1
21-23	7	-	-	1	2	3	1	-
24-26	3	-	-	-	1	2	-	-
27-29	5	-	-	1	2 ^a	2	-	-
30-33	3	-	1	-	1	1	-	-
34-36	5	1	-	-	-	1	1	2
37-40	-	-	-	-	-	-	-	-
41-43	2	-	-	-	-	-	1	1
44-53	2	-	1	1	-	-	-	-
Total	31	—	4	3	6	10	3	4

^aOne is a licensed beautician.

Income

Mean annual income for the thirty-one families was \$1638. If the context of poverty was refined to adjust to family size, all of the families would be classed as in poverty. The family of seven in the highest income group had income from three sources including paid employment of the homemaker, social security benefits, and an aid to dependent children grant. The distribution of family income by size of family is shown in Table 2.

Occupation

Most of the thirty-one homemakers had job experience in restaurants, food service and in hospitals. Six had no job experience. Seven were gainfully employed at the time of the interview, but only one was fully self-supporting. Occupation and work experience of homemakers is shown in Table 3.

TABLE 2.--Household income by month and year and family size

Per Month	Year Equiv.	Families n = 31	Family size						
			2	3	4	5	6	7	8
n = 31									
\$ 90-139	\$1080-1668	4	1	1	1	1	-	-	-
140-184	1680-2208	11	-	2	-	1	-	-	8
185-229	2220-2748	9	-	-	1	7	1	-	-
230-274	2760-3288	2	-	1	-	1	-	-	-
275-319	3300-3828	4	-	-	-	2	-	1	1
320-364	3840-4368	0	-	-	-	-	-	-	-
365-409	4400-4908	0	-	-	-	-	-	-	-
410-450	4290-5400	1	-	-	-	-	-	1	-
All		31	—	1	4	2	12	1	2
									9

TABLE 3.--Occupation and work experience of homemakers

Occupation	Previous experience	Present work
No occupation or work experience	6	-
Laundry or dry cleaners	5	1
Restaurants	13	2
House work hotel maid	-	1
Hospital	4	1
Beauty operator	1	-
Store clerk	-	1
Laboratory aide	-	1
All	29 ^a	7

^aIncludes both present and previous work.

Meal Patterns

Only four of the families were able to eat all three meals together, although most families had regular meal hours. Dinner was the meal the majority sat down and ate together, but fewer families had a regular hour for the noon meal because children ate lunch at school or the mother was working. For one family, Sunday was the only sit-down meal that family had together (Table 4).

TABLE 4.--Meal patterns of the family

Meals and hours	Regular meal hours for families n = 31	Sit-down meals together for families n = 31
Breakfast		
7:00 - 9:00	29	12
Lunch		
11:00 - 1:00	17	11
Dinner		
4:30 - 7:00 p.m.	29	29
Sunday only	--	1

Shopping Practices

The investigator noted both by observation and by direct questions the source of information used by the home-maker in preparation for shopping. The results are reported in Table 5.

About one-fourth had no shopping plan and another one-fourth used shopping lists. Over half did some preplanning of food purchases as indicated by those who noted

newspaper food advertisements, used a shopping list, or some combination. One homemaker made menus before shopping, a practice she had learned as a cook in a fraternity house.

TABLE 5.--Source of information and shopping aids

Information source and aids	Homemaker n = 31	
	Number ^a	Percentage
Have access to newspaper	18	58
Note food ads in paper before shopping	15	48
Note specials sales in store	14	45
Use shopping list	8	26
No plans for shopping	7	23
Shop where friends go	4	13
Radio, T. V. food adv.	0	0

^aHomemakers cited more than one source of information.

The investigator observed while shopping with twenty-three of the thirty-one women that they seemed to know what they usually bought each month and did not deviate much from this pattern of purchasing. However, new products on the market advertised displayed in the store, and items suggested by friends prompted some to buy. No homemaker was observed asking for an item not on the shelf or on display.

Frequency of shopping varied considerably, as did the items purchased. The shopping day tended to be Friday (6) or Saturday (8) with two each purchasing on Thursday and Friday.

One liked Wednesday, but none chose Monday or Tuesday unless it was a pay day. Eight of the thirty-one shopped on the first of the month when they received money regardless of the day of the week. Bread and milk were the items purchased between shopping trips. Major shopping trips were made in the thirty-one households by eighteen (58%) once a week; ten (30%) two or three times a week; two (6%) once a month and one twice a month.

The thirty-one homemakers did their own food buying. Over half (51%) of the homemakers learned to shop from their mothers. Thirteen (42%) learned by themselves. High school home economics classes were the source of information of food shopping for eight. One learned from her husband and one learned from a class held for recipients of Aid to Dependent Children grants in Chicago, Illinois.

Homemaker and Students Compared Shopping Cost Comparisons

A tabulation of the costs of food purchased by the homemakers and the cost estimates by the two students who re-shopped each of the homemaker lists is presented in Table 6.

TABLE 6.—Food shopping costs of homemaker and students

Homemaker n = 31		Student n = 25		Group I		Student n = 25		Group II		Differences between Homemaker and Student Groups	
Ident. No.	Actual cost	Ident. No.	Simulated cost	Ident. No.	Simulated cost	Ident. No.	Simulated cost	Ident. No.	Simulated cost	I	II
1	\$ 20.22	17	\$ 21.73	13	\$ 19.94					1.51	.28
2	27.14	11	27.97	21	29.10					.83	1.96
3	16.34	13	16.95	15	16.54					.61	.20
4	23.15	18	22.55	15	23.31					.60	.16
5	21.15	22	22.58	17	22.18					1.43	1.03
6	57.77	22	66.66	16	65.85					8.89	8.08
7	9.38	18	9.65	16	9.22					.27	.16
8	21.45	11	24.23	21	25.39					2.78	3.94
9	21.47	9	21.31	19	21.46					.16	.01
10	14.08	3	16.26	2	16.04					2.18	1.96
11	7.65	1	7.12	7	7.71					.53	.06
12	15.80	6	15.69	12	16.99					.11	1.19
13	9.68	10	11.25	8	11.52					1.57	1.84
14	23.28	5	23.85	2	25.38					.57	2.10
15	73.48	10	79.04	7	80.03					5.56	6.55
16	20.69	5	20.82	1	20.15					.13	.54
17	10.59	6	11.06	12	11.16					.47	.57
18	20.26	3	20.16	8	24.38					.10	4.12
19	10.25	10	10.40	25	9.42					.15	.83
20	8.35	23	8.61	20	8.92					.26	.57
21	39.16	24	44.38	20	42.29					5.22	3.13
22	16.19	9	18.23	23	17.15					2.04	.96
23	16.90	14	17.23	24	16.52					.33	.38
24	6.47	24	7.06	20	7.18					.59	.71
25	22.82	9	24.13	19	24.62					1.31	1.80
26	12.08	14	12.86	4	13.62					.78	1.54
27	13.79	25	15.70	19	13.61					1.91	.18
28	57.96	14	63.17	25	64.48					5.21	6.52
29	29.36	14	31.79	4	32.06					2.43	2.70
30	38.75	23	38.79	4	41.22					.04	2.47
31	11.19	19	10.67	10	10.79					-.52	-.40
All	\$696.85		\$741.90		\$748.23					45.05	51.38
Mean	22.47	**	24.13	ns	23.93					48.22	
	*P = 0.01		ISD = 0.92								

The homemakers spent less money than students estimates. Buying food for their families for periods of one week to a month, homemakers spent \$696.85 for their food choices in the market. Students in Group I, selecting the same food in the same town, within a six-day period, simulated spending of \$741.90; Students in Group II, \$748.23.

Six students in Group I and eight students in Group II estimated costs less than homemakers by \$0.01 to \$0.83 cents. Student number nineteen outshopped three homemakers. None of the rest outshopped more than one homemaker. Nevertheless, most homemakers spent less than the student estimates. There was a mean difference between the average of Students Group I and Group II of only \$0.20 cents (\$24.13 - \$23.93), but between their mean (\$24.03) and that of the homemakers (\$22.47) there was a difference of \$1.56 in favor of the homemaker. That is, students spent 7 per cent more than homemakers (Table 6).

Homemakers spent less money for food than did students in their cost estimates. Analysis of variance shows the differences in amounts spent for food by homemakers and estimated by student groups are significant ($P < 0.01$) (Table 7). The difference between the two student groups was not statistically significant.

The mean for Student Group I was greater than homemakers (22.47) by 1.66 and that of Student Group II was greater by 1.46. Both were greater than the computed LSD (least significant difference) of 0.92 (Table 6).

TABLE 7.--Analysis of variance: food cost of homemaker, and simulated cost of Student Groups I and II

Source of variation	Degrees of freedom	Sum of squares	Mean squares	F-Value
Treatment	2	50.64	25.32	13.6 **
Blocks	30	26,239.43	874.65	470.11**
Error	60	111.63	1.86	—
Total	92	26,401.70		

**P 0.01

Shopping Time Comparisons

Students, with more formal education than any of the homemakers spent less time in the store than did homemakers. The average time of shopping for homemakers was forty-six minutes, compared to Student Group I of forty minutes and Student Group II of forty-two minutes. The homemakers spent a total of twenty-four hours in the store buying food for their families, the shortest shopping time was fifteen minutes and the longest, two hours. Student Group I used twenty-one hours, with their shortest shopping time twenty minutes and longest two hours.

Evaluation - Student and Homemaker

Food Groups

Students were asked: In your opinion what are the gaps in nutrition for this family, based on food originally purchased? Homemakers were asked: If you had \$5. extra to spend for foods, on what would you spend it? They were asked

to be selective and not simply choose to spend more for all four basic food groups listed.

TABLE 8.--Needed nutrients for family by food groups

Food group	Homemakers' opinion n = 31	Students' opinion n = 25 ^a
Meat, Poultry, Eggs	16	5
Milk, Cheese, Ice Cream	5	15
Breads and Cereals	1	1
Fruits and Vegetables	9	22

^aSome lists considered inadequate in more than one group.

Sixteen (51%) homemakers would buy more meat, poultry, and eggs. Students said the milk, cheese and ice cream group was inadequate, only five women agreed with them. There was complete agreement on the adequacy of the bread and cereal group, with both groups citing only one list as inadequate. Fruits and vegetables were chosen by only nine (29%) homemakers, but students said this group was inadequate, especially in green and yellow vegetables and in citrus fruits.

The food choices made by the homemakers were made to satisfy more than nutritional or economic needs. They seemed aware of being expected to buy foods their families wanted. They shopped to fill some of the "felt needs" of their families. Remarks heard during the shopping trips were: "The children like this." "This is easy to use for school lunches."

"I heard that this was good." "I always buy a treat for the children when I get my check." "I should buy some of the diet foods, but they are too expensive. I need to lose weight." "I could buy a lot more, but I had to pay my bills before I bought food this month." One homemaker, who bought 3 T-bone steaks said, "During the war in Europe, we often did not have enough food, now we can have it. I don't try to save on food."

The presence of the researcher did not seem to affect food choices. The role assumed was that of a recorder rather than a source of information about shopping. Only one homemaker asked at the end of the shopping trip, "Did I do a good job shopping?"

The complexity of food choices become more apparent as some of the food items students thought could be "cut-out" as not essential for nutrition are noted. These are listed on page 29. It may be that these are essential for morale building. If so, then money savings on these items might not be used for more nutritious foods, but for compensatory consumption to offset disruption of food patterns.

Specific Foods

Students were asked to evaluate the shopping list according to the following instructions: (Appendix C)

If you were buying food for this family and wished to provide more nutritious meals at equal or less money, what seems to be the most economical way to meet nutrient need.

- a. List items that could be cut out with no substitutions made.
- b. List substitutions that could be made.
- c. List new items you would add or make other suggestions.

Foods to be "Cut-Out"

Items the students suggested to be "cut-out" of the shopping list with no substitutions made for the item are as follows:

tomato paste	cake mix	cream
spaghetti sauce	apple butter	pizza sauce
hot sauce	cookies	fruit juice
dill pickles	gelatin dessert	doughnuts
potato chips	steak	french fries
bacon	coffee	mushrooms
candy bars	powdered cream	coca cola
grape jelly	waffle syrup	T. V. dinners
cole slaw dressing	grape nuts	canned meat
vitamin pills	mayonnaise	corn on the cob
pepper	baby food	popcorn
catsup	tea	walnut meats
instant potatoes	cheese wafers	pie
marshmallows	cheese crackers	dried red pepper
chicken wings	olives	soda pop
steak sauce	eggs	rice honey cereal
pretzels	chicken	oven ready biscuits
sliced cheese	popsicles	hamburger buns
pork chops	sweet rolls	chocolate topping
corn chips	non-calorie	frosting mix
parfait cakes	sweetener	cocoa mix

Suggested Substitutions:

Items the students believed could be reduced or eliminated, and presumably the need could be met by a more economical substitution as cited:

Oatmeal for prepared cereal
 Cocoa for cocoa mix
 Liver for weiners or hamburgers
 Bulk hamburger for patties
 Salad dressing for Mayonnaise
 Bread for cookies
 Small eggs for medium size
 Ground beef for bacon
 Frozen juice for orange drink

Carrots for fresh tomatoes
Cheaper cuts of meat for fish steaks
Hamburger or steak for lunch meat
Fruit juice for fresh oranges
Broccoli for carrots
Sausage for part of frozen turkey pies
Whole chicken for cut up fryer
Bread for muffin mix
Canned tomatoes for fresh tomatoes
Less expensive fruit for strawberries
Vitamin pills for gaps in nutrition
Vegetables and potatoes for salami and pizza
Smaller jar of peanut butter than three pounds
Whole wheat bread for sandwich style white bread
Fresh potatoes for canned, frozen french fries, hash
browns, or packaged potato chips au gratin or shoe
string potatoes
Separate purchases of macaroni and cheese for packaged
combination
Frozen broccoli and cauliflower for part of 6 cans of
green beans
One cherry pie and one-half gallon of ice cream for two
cherry pies.

Suggested New Items

The students suggested additions to the shopping list
as follows:

Buy potato flakes	Use more fruits and vegetables
Buy roast and chops	Increase use of eggs
Buy in smaller quantities	Use dry milk
Buy eggs from farmer	Prepare more food at home
Buy raisins, walnuts, make cookies	Use variety of meats
Buy cherry pie filling	Use frozen juice

Suggestions by the students to provide more nutritious
meals at equal or less money for the family reflect their
own value judgments, tastes, knowledge of nutrition and con-
cept of costs. The suitability of these suggestions would
need to be studied in terms of family food habits and psycho-
logical needs, which was not part of this study. In singling
out one item, the use of dry milk, which is generally recom-
mended for low-cost food plans, it was noted that only thirteen

of the twenty-five students suggested the use of dry milk to supplement milk supply. Only two of the thirty-one home-makers purchased dry milk.

Adequacy of Food Expenditures

In order to find out if the homemakers had spent enough money to buy an adequate amount of food for their family, students were given the following instructions:

Based on the United States Department of Agriculture recommended allowances of money for food purchases of the "low-cost plan," will amount of money spent buy essential needs? What is the amount of variance? (Use low-cost food plan June, 1964, Family Economics Review, October, 1964.)

Families were spending only a little more than half the amount of this low-cost food plan. Students figured the thirty-one families needed \$1323.28, with proper adjustment made for composition and size of family. Homemakers spent only a total of \$696.85, leaving an unmet need of \$626.43. Large amounts of food were not kept on hand by these families. Homemakers were not spending as much for food as recommended in the low-cost food plan.

Table 9 shows the individual unmet need for each family.

TABLE 9.—Food expenditures compared with estimated needs

Ident. No.	Age and sex composition of manless family unit		Actual cost	Est. of needs	Unmet need
	No. in family	Ages Woman	Boys	Girls	
1	4	20	2	5,1	\$ 20.22 ^w
2	4	19	2	1,3	72.00
3	4	21	6 mo.	4,1	27.14 ^m
4	5	22	3,2 mo.	2,1	68.80
5	4	41	13	7,2	16.34 ^w
6	5	35	6,1	11,10,9,6,3	17.20
7	8	35	12	16,15,13	23.15 ^w
8	9	34	27	16,13,7,6	76.76
9	10	45,19,18	21	2 yr. 1,6 mo.	21.15 ^c
10	11	45,19,18	21	2	57.77 ^m
11	12	30	9,7	10,8,5,4	41.40
12	13	42	4,2	9,8	153.00
13	14	32	4,6,11	12,9,14	57.82
14	15	22	3,8 mo.	4,2	1.82
15	16	30	7,5	10,4	38.75 ^w
16	17	25	3	2	21.45 ^w
17	18	23	7,6,4,2	5,10,8	28.59
18	19	53	5,4	5	7.14
19	20	27	6,10	4	21.37
20	21	27	6,5,2	4	11.00
21	22	29,52	10,9	3	14.08 ^w
22	23	19,22	3,1	3	15.02
23	24	28	6	9,5	33.75
24	25	25	3	7,6	17.95
25	26	34	2	12,9,8,2	8.38
26	27	25	6	8,3,2,10 mo.	13.71
27	28	21	6	3	82.08
28	29	36	4	10,2	36.99
29	30	23	7,5,2	10,2	8.60
30	31	19	2	11.19 ^w	1.92
All				11 mo.	\$ 696.95
					\$ 1323.28
					\$ 626.42

a Based on low-cost plan, Family Economics Review, June, 1964.
 b One and one-half week period
 c Two-week period
 w One-week period

Summary

The thirty-one manless families interviewed averaged 3.5 persons and their incomes were at or below the poverty level. Seven of the homemakers were employed outside the home, but all except one was receiving government financial aid. Present and previous work was in restaurants, hospitals, motels, and homes. Education of the homemakers ranged from seventh grade to high school graduate. Over half had finished the eleventh grade and of these, four were high school graduates.

The first objective of the study was to compare the cost of food purchased by low-income, female-headed families with cost estimates on the same items of comparable quality selected by home economics senior students. Homemakers spent seven per cent less money than did either Student Group I or Student Group II. The difference between student groups was not statistically significant, but the difference between the homemakers and both student groups was highly significant.

The second objective was to obtain students' suggested revisions of purchases for improved nutrition at equal or less cost. Students thought they could purchase more nutrition for the same money by omitting some items and substituting or adding others. No attempt was made to evaluate the students' suggestions. Some may be considered good and some not, but all reflect the judgments and personalities of the students and their cultural heritage. Recognition of these

same characteristics would need to be made in the effect of suggested changes on psychological satisfactions of the particular family. Food purchased by homemakers may be filling some "felt" needs other than nutritional ones.

Using the United States Department of Agriculture low-cost food plan (1964), students estimated that families needed almost twice as much money as they were now spending to purchase nutritionally adequate meals at low-cost.

RECOMMENDATIONS

The third objective considered implications for consumer education programs. The project was not designed to undertake in any formal fashion development of recommendations. From the facts obtained, first, that homemakers spent only about half enough money to secure recommended food amounts and second, that the food choices of the homemakers could not be "outshopped" by trained senior home economics students, buymanship alone would not be the appropriate emphasis in consumer education programs for them. However, from observation and conversation of the researcher with the thirty-one homemakers and twenty-five students, there are some recommendations that may be helpful.

1. For improved nutrition, the major change should be in food choices.
2. Nutrition information could be more effective for the homemakers in this study if presented in the store at point of purchase.
3. Homemakers need to be made aware of existing sources of information and services in community,

such as Extension Service and adult classes.

4. Interest in reducing diets and diet foods could be used to focus teaching nutrition to benefit the whole family.
5. Food subsidy programs, such as the food stamp or surplus food plan, might be utilized to improve food consumption and nutrition.
6. Training women for job opportunities, especially in work they have had experience, such as restaurants, hospitals, motels and homes could increase incomes and money available for food.
7. Product information useful to the homemaker in making comparable choices in the market can best be used if presented in the store in the area where products are sold. If this information were on the product label it would go home as a further teacher.
8. Product information at the point of purchase is most useful to homemakers, if it is standardized and comparisons can be based on significant product differences.
9. Improved teaching tools, methods, and the use of all types of media are needed to reach homemakers for change in food choices and in food habits.
10. Progress in nutrition education is inhibited by custom and habit. The same may be said today as Ellen Richards said in 1878 about the New England Kitchen established to teach nutrition to the poor by example, "The death knell was sounded, by the woman, who said, "I don't want to eat what's good for me; I'd ruther eat what I'd ruther." (Hunt, 1931)
11. Home economics students need additional opportunities to learn food buying to (1) assist homemakers improve shopping practices, and (2) to develop effective consumer education programs at all age levels that will be meaningful and applicable.
12. A study on the apparent complacency and acceptance of life as it is by the thirty-one homemakers could provide clues for motivation.

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APPENDICES

APPENDIX A

Survey No. _____ No. in Family _____ Market _____
Time Arrival at Store _____ Departure _____

APPENDIX B

Survey No. _____

Date of each visit _____

Survey of Food Choices of Female-Headed Households in Riley County, Kansas, 1965

1. If you had \$5.00 extra to spend for foods, on what would you spend it?

Meat, poultry or eggs Bread and Cereals
 Milk, cheese, Ice Cream Fruits and Vegetables

2. Check the one that is nearest your monthly income?

<input type="checkbox"/> \$90 to 139 per month	<input type="checkbox"/> \$275 to 319 per month
<input type="checkbox"/> \$140 to 184 per month	<input type="checkbox"/> \$320 to 364 per month
<input type="checkbox"/> \$185 to 229 per month	<input type="checkbox"/> \$365 to 409 per month
<input type="checkbox"/> \$230 to 274 per month	<input type="checkbox"/> \$410 to 450 per month or over

3. People who live in your household

Relation to Head	Sex	Age	Year School Completed	Occupation	Hours Worked per Week
1.					
2.					
3.					
4.					

4. _____ What are your usual meal hours?

5. _____ At what meals does the family sit down and eat together?

6. Do any special foods need to be purchased for any member of the family? Why?

What kinds? _____ Amount per week _____

7. _____ What days do you usually shop?

8. _____ How many times a week is food purchased?

9. _____ Where did you learn to shop for food?

10. _____ What information about food is most helpful to you in your regular food shopping?

APPENDIX C

Part III Assistance in research study for Home Management
Independent Study

Phase A Procedure for shopping:

1. You will be given two separate lists of food items, with amounts and a probable price for each item.
2. You will shop at only two stores of your own choosing for good buys in Manhattan, Kansas.
 - a. You are free to substitute brands of comparable quality. (Be able to explain the substitution)
 - b. No substitution will be allowed in form of food, (e. g., canned for fresh)
3. You will select (not buy)
 - a. same items of like quality
 - b. record name of item, brands and price, and
 - c. record amounts and total amounts spent for each column and for grand total.
4. Shopping must be done within 6 days of receiving shopping list.
5. Record shopping time in store.
6. When this part is completed, give to Helen Barney for Part III, Phase B.

Phase B Evaluation of shopping list

1. In your opinion what are the gaps in nutrition for this family, based on food originally purchased. May use attached check list for food groupings.
2. If you were buying food for this family and wished to provide more nutritious meals at equal or less money, what seemed to be the most economical way to meet nutrient needs.
 1. List items that could be cut out with no substitutions made.
 2. List substitutions that could be made.
 3. List new items you would add or other suggestions.
3. Based on USDA recommended allowances of money for food purchases of the "low cost plan", will amount of money spent buy essential needs. What is the amount of variance? (Use June, 1964, North Central Region Cost Index).

APPENDIX D

SCORE SHEET FOR A THREE-DAY FOOD RECORD

Adapted from the device developed by Willa Vaughn Tinsley under the direction of Clara Brown Arny and Jane M. Leichsenring.

Food Groups	Number Serving	in No. family	Serving per person	Rating				Diet Score
				0	1	2	3	
1. Green & yellow vegetables (some raw, some cooked or canned). Average serving: 2/3 cup cooked or 1 cup raw				none	one	two	three	1. _____
2. Oranges, tomatoes, grapefruit, raw cabbage, or salad greens. Av. serv. 1 orange, 1 tomato, 1/2 grapefruit, 1 c. raw greens, or 1/2 c. juice.				none	one	two	three	2. _____
3. Potatoes. Av. Serv.: 1/2 cup cooked.				none	one	two	three	3. _____
4. Other fruits & vegetables (raw, cried, cooked or canned.) Av. serv.: 1/2 c. cooked.				none	two	four	six	4. _____
5. Milk & milk products or cheese. Av. serv.: 1 c. milk or 1 cu. in. of cheese.				none	three	six	nine	5. _____

APPENDIX D--(continued)

FOOD SHOPPING PRACTICES OF SELECTED LOW-INCOME
FAMILIES, RILEY COUNTY, KANSAS, 1965

by

HELEN SEDERSTROM BARNEY

B. S., South Dakota State University, 1934

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Family Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1965

Twenty-five senior home economics students countered their ability as shoppers against that of thirty-one homemakers with little or no formal consumer education. Traditionally we have tried to change buying habits on the basis of budgetary standards, but for this study the food choices of low-income, female-headed families were used.

The average size of the thirty-one families was 3.5 persons. Incomes were at or below the poverty level. Seven homemakers were employed outside the home. Present and previous work experience was in restaurants, hospitals, motels, and homes. Education of the homemakers ranged from seventh grade to high school graduate. Over half had finished the eleventh grade and of these, four were high school graduates.

For the comparative shopping between students and homemakers, purchases of thirty-one women for their family's food was recorded in the store or as food was stored in the home immediately after purchase with the cooperation of the homemaker. Each of twenty-five senior home economics students enrolled in a home management course were given two lists of food purchased by the homemakers to shop for "good buys" of the same items of comparable quality within six days. They also were asked to express opinions on the nutritive value and cost of food purchased.

Homemakers spent 7 per cent less for food than the students estimates. The difference between Student Group I and Student Group II was not significant, but the difference

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For the comparative shopping between students and homemakers, purchases of thirty-one women for their family's food were recorded in the store or as foods were stored in the home immediately after purchase with the cooperation of the homemaker. Each recorded list of food was shopped by two different students. The twenty-five senior home economics students enrolled in a home management course were each given at least two lists and instructed to shop the "good buys" for the same food of comparable quality within six days. They were asked to express opinions on the nutritive value and cost of food purchased.

Homemakers spent 7 per cent less for food than the students' estimates. The difference between Student Group I and Student Group II was not significant, but the difference

between student groups and homemakers was significant ($P = 0.01$).

More nutrition could be purchased with the same expenditures by eliminating certain items and making some substitutions was the opinion of the students. Students judged diets to be especially low in fruits, vegetables, and milk, but almost adequate in meat. Homemakers thought their food choices low in meat, but both agreed on adequacy of the bread and cereal groups. No attempt was made to evaluate the students' suggestions. Recognition would need to be made on the effect that suggested changes in food selection would have on satisfying desires of the particular family.

Using the low-cost food plan (USDA, 1964), students estimated families needed \$1323.28 to purchase foods, but only \$696.85 was spent. Families observed did not carry large amounts of food on hand. Homemakers were only spending half enough to buy essential foods.

This research, while limited in scope, gives insight into what are the food choices of these homemakers and the need for some change. Homemakers seem to be making economical purchases of their food choices. Home economics students need more information and experience in consumer buying.